DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
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NOTICE OF ACCEPTANCE (NOA)

Carlisle Syntec, Inc.
1285 Ritner Highway
Carlisle, PA 17013

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.
This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Carlisle Sure-Flex Single Ply PVC Roof Systems over Steel Decks

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This revises NOA# 11-0718.05 and consists of pages 1 through 9.
The submitted documentation was reviewed by Alex Tigera.

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Single Ply
Material:	PVC
Deck Type:	Steel
Maximum Design Pressure	-82.5 psf
Fire Classification:	See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product Name	Dimensions	Test Specifications	Product Description
Sure-Flex	various	TAS131	Reinforced white or colored PVC membrane.
FAST 100-LV Adhesive	various	TAS 110	Spray Polyurethane Adhesive
OlyBond 500 BA	various	TAS 110	Spray Polyurethane Adhesive
Low VOC PVC Bonding Adhesive CTM 20	various	TAS 110	Solvent-based bonding adhesive.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam Composite	Isocyanurate Insulation with perlite facer	Atlas Roofing Corp.
ACFoam II	Isocyanurate Insulation	Atlas Roofing Corp.
Polyisocyanurate HP, HP-N, HP-H, HP-W	Polyisocyanurate roof insulation.	Carlisle Syntec, Inc.
DensDeck, DensDeck Prime	Silicon treated gypsum	G-P Products
H-Shield	Polyisocyanurate foam insulation	Hunter Panel
ENRGY 2, ENERGY 3, PSI-25	Isocyanurate Insulation	Johns Manville
Insulfoam I, SP	Expanded Polystyrene	Insulfoam, LLC
R-Tech, R-Tech Fan-Fold	Expanded Polystyrene	Insulfoam, LLC
Securock	Gypsum based board stock	United States Gypsum Corporation

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Sure-Seal HP, HP-X, HP-Xtra, HP Purlin Fasteners	Insulation and membrane fastener	Various	Carlisle SynTec, Inc.
2.	Piranha, Piranha Xtra Plates	Metal plates used for membrane securement with Sure-Seal fasteners.	2-3/8" dia	Carlisle SynTec, Inc.
3.	Plastic Plate	Polyethylene stress plate	3.2" round	ITW Buildex
4.	Olympic Fasteners #12, #14	Insulation and membrane fastener	Various	Olympic Mfg. Group
5.	Olympic Plastic	Plastic plates for fasteners.	3" round	Olympic Mfg. Group
6.	Insul-Fixx Fastener	Insulation fastener for steel and wood decks	Various	SFS Stadler, Inc.

EVIDENCE SUBMITTED:

Test Agency	Test Identifier	Description	Date
Factory Mutual Research Corp.	3021764	4470	01/11/06
	3009502	4470	12/21/00
	3014692	4470	08/05/03
	3037400	4470	09/02/09
	3028154	4470	11/16/07
Trinity ERD	C14040.03.12-R1	ASTM D 2196-99	03/28/12

APPROVED ASSEMBLIES

Membrane Type: Single Ply, Thermoplastic, PVC, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(1): All layers of insulation simultaneously attached; membrane fully adhered.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Polyisocyanurate HP, HP-W, HP-H, HP-N Minimum 2" thick	**1**	**1:1.6 ft²**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Single and multiple layers of insulation can be attached to base layer with Carlisle Syntec FAST 100-LV Adhesive.

Vapor Retarder: (Optional) Any UL or FMRC approved vapor retarder applied to the roof deck or over a base layer of insulation.

Barrier: None.

Membrane: Sure-Flex, 50, 60 or 80 mil membrane fully adhered to the insulation using Low VOC PVC Bonding Adhesive CTM 20 applied to the substrate at a rate of 1 gal/60 ft.²

Maximum Design Pressure: -67.5 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(2): All layers of insulation simultaneously attached; membrane fully adhered.

All General and System Limitations apply.

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Single and multiple layers of insulation can be attached to base layer with Carlisle Syntec FAST 100-LV Adhesive.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY-2, ENRGY-3, AC Foam II, Polyisocyanurate HP, HP-W, HP-H, HP-N, H-Shield, Insulfoam I or VIII		
Minimum 1.5" thick	**N/A**	**N/A**

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Required over the insulations listed in Base Layer or optional over any of the insulations listed as Base or Top Layer:		
Dens Deck Prime, Securock		
Minimum ¼ " thick	**1, 3, 4, 5 or 6**	**1:2 ft²**

Vapor Retarder: (Optional) Any UL or FMRC approved vapor retarder applied to the roof deck or over a base layer of insulation.

Barrier: None.

Membrane: Sure-Flex Reinforced, 50, 60 or 80 mil membrane fully adhered to the insulation using Low VOC PVC Bonding Adhesive CTM 20 applied to the substrate at a rate of 1 gal/60 ft.^{2}

Maximum Design Pressure: -45 psf (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 gage ASTM A 446 Grade E Steel deck fastened to steel support or 16 ga structural steel purlins at a maximum span of 6 feet o.c. Steel deck shall be fastened with minimum ITW Buildex Teks 5 at a maximum spacing of 6 inches o.c. Side laps shall be fastened with ITW Buildex Teks 1 at a maximum spacing of 24 inches o.c.

System Type D: Membrane mechanically attached over preliminarily fastened insulation.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY-2, ENRGY-3, AC Foam II, Polyisocyanurate HP, HP-W, HP-H, HP-N, H-Shield, Insulfoam SP, R-Tech, R-Tech Fan-Fold, Securock		
Minimum 1.5" thick	**N/A**	**N/A**

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. At an application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. Single and multiple layers of insulation can be attached to the deck with FAST 100-LV Adhesive.

Vapor Retarder: (Optional) Any UL or FMRC approved vapor retarder applied to the roof deck or over a base layer of insulation.

Barrier: None.

Membrane: Sure-Flex, Reinforced, secured through the preliminarily attached insulation as specified below.

Note: **HP Purlin fasteners must be used in place of HP-X fasteners when securing into minimum 16 gauge structural purlins.**

Fastening #1: Sure-Seal HP-X Fasteners with Piranha Plates 6" o.c. through the Sure-Flex Membrane in the lap in rows spaced 35" o.c.
Note: HP Purlin fasteners must be used in place of HP-X fasteners when securing into minimum 16 gauge structural purlins.
Maximum Design Pressure -82.5 psf. (See General Limitation #7)

Fastening #2: Sure-Seal HP-X Fasteners with Piranha Plates 12" o.c. through the Sure-Flex Membrane in the lap in rows spaced 35" o.c.
Note: HP Purlin fasteners must be used in place of HP-X fasteners when securing into minimum 16 gauge structural purlins.
Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #3: Sure-Seal HP-X Fasteners with Piranha Plates 12" o.c. through the Sure-Flex Membrane in the lap in rows spaced 75.5" o.c.
Note: HP Purlin fasteners must be used in place of HP-X fasteners when securing into minimum 16 gauge structural purlins
Maximum Design Pressure -45 psf. (See General Limitation #7)

Fastening #4: Sure-Seal HP-X Fasteners with Piranha Plates 6" o.c. through the Sure-Flex Membrane in the lap in rows spaced 75.5" o.c.
Note: HP Purlin fasteners must be used in place of HP-X fasteners when securing into minimum 16 gauge structural purlins
Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #5: **Minimum Grade C steel deck:** Sure-Seal HP-X Fasteners with Piranha Plates 6" o.c. through the Sure-Flex Membrane in the lap in rows spaced 75.5" o.c.
Note: HP Purlin fasteners must be used in place of HP-X fasteners when securing into minimum 16 gauge structural purlins
Maximum Design Pressure –52.5 psf. (See General Limitation #7)

Fastening #6: **Minimum Grade C steel deck:** Sure-Seal HP-Xtra Fasteners with Piranha Xtra Plates 12" o.c. through the Sure-Flex Membrane in the lap in rows spaced 75.5" o.c. Note: HP Purlin fasteners must be used in place of HP-X fasteners when securing into minimum 16 gauge structural purlins
Maximum Design Pressure –45 psf. (See General Limitation #7)

Fastening #7: **Minimum Grade C steel deck:** Sure-Seal HP-Xtra Fasteners with Piranha Xtra Plates 12" o.c. through the Sure-Flex Membrane in the lap in rows spaced 35" o.c. Note: HP Purlin fasteners must be used in place of HP-X fasteners when securing into minimum 16 gauge structural purlins
Maximum Design Pressure –60 psf. (See General Limitation #7)

Maximum Design Pressure: –See Fastening Options Above

STEEL DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhancedfastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 137, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.

2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.

3. The membrane can be identified using the identification code printed outside the splice overlap area (visible every 50') or within the slice area. The code begins with either 9 or 91 to designate the plant. The next three letters designate the material and color. The next six numbers designate the date of manufacture (year/month/day). The next letter designates the shift and the last number designates the machine. In addition to this identification code, the letters "CCM" are also printed within the splice overlap area.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All membranes or packaging shall bear the imprint or identifiable marking of the manufacturer's name or logo and the following statement: "Miami-Dade County Product Control Approved" or the Miami-Dade County Product Control Seal as shown below.

MIAMI-DADE COUNTY APPROVED

11. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9N-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE